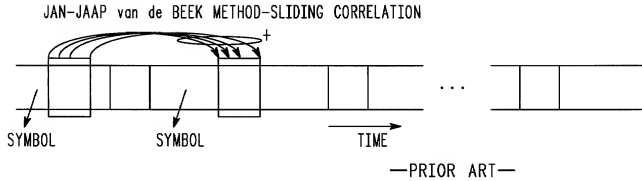
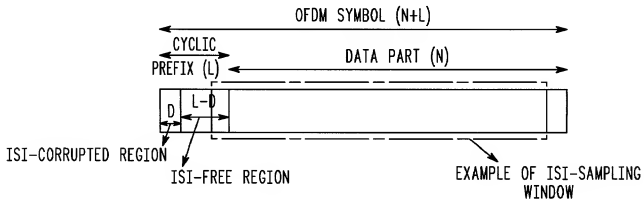


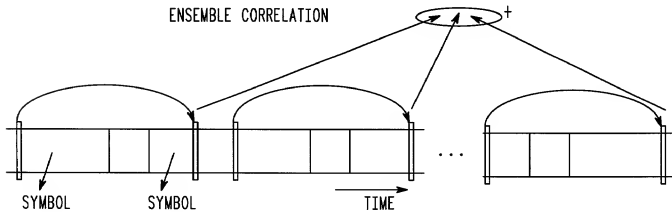
1/6



**FIG. 1**

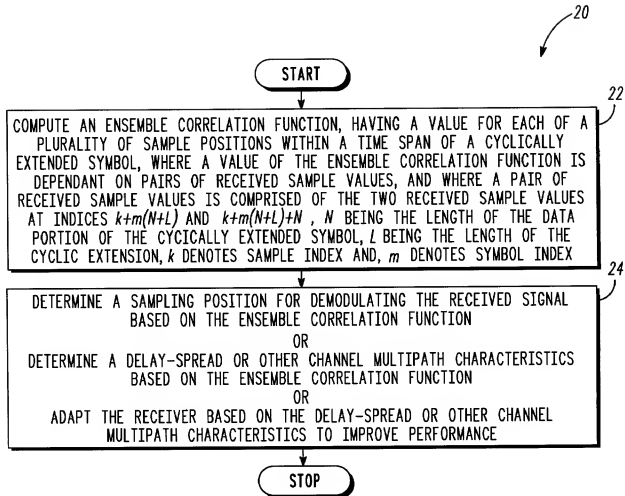


**FIG. 2**



**FIG. 3**

2/6



**FIG. 4**

START

COMPUTE A "CORRELATION VALUE" FOR EACH RECEIVED  
SAMPLE BY TAKING THE CONJUGATE PRODUCT OF THE SAMPLE  
WITH ANOTHER SAMPLE THAT IS  $N$  SAMPLES AWAY

$$A(k) = r^*(k)r(k+N)$$

COMPUTE AN "ENERGY VALUE" FOR EACH RECEIVED  
SAMPLE BY COMPUTING THE SQUARE OF ITS MAGNITUDE

$$B(k) = |r(k)|^2$$

FOR EACH OF THE  $N+L$  SAMPLE POSITIONS WITHIN ONE OFDM  
SYMBOL PERIOD, COMPUTE THE NUMERATOR OF AN "ENSEMBLE  
CORRELATION FUNCTION" BY COMBINING THE CORRELATION  
VALUES ACROSS AN ENSEMBLE OF  $M$  OFDM SYMBOLS

$$N(k) = \sum_{m=0}^{M-1} A(k+m(N+L))$$

FOR EACH OF THE  $N+L$  SAMPLE POSITIONS WITHIN ONE OFDM  
SYMBOL PERIOD, COMPUTE THE DENOMINATOR OF THE ENSEMBLE  
CORRELATION FUNCTION BY COMBINING THE ENERGY VALUES ACROSS  
THE ENSEMBLE OF  $M$  OFDM SYMBOLS

$$D(k) = \sqrt{\sum_{m=0}^{M-1} B(k+m(N+L))} \sqrt{\sum_{m=0}^{M-1} B(k+N+m(N+L))}$$

COMPUTE THE VALUES OF THE ENSEMBLE CORRELATION FUNCTION,  $\rho(k)$  BY  
DIVIDING  $N(k)$  BY

$D(k)$  FOR  $k=0$  TO  $N+L-1$

$$\rho(k) = \frac{N(k)}{D(k)}$$

MEDIAN FILTER THE ENSEMBLE CORRELATION FUNCTION TO REMOVE GLITCHES

FIND THE PEAK,  $\rho$  OF THE ENSEMBLE CORRELATION FUNCTION AND COMPUTE A  
THRESHOLD,  $t$  AS A FUNCTION OF THE PEAK VALUE

FIND THE PLATEAU REGION OF THE ENSEMBLE CORRELATION FUNCTION BY  
DETERMINING THE PORTION THAT EXCEEDS THE THRESHOLD. DECLARE THIS REGION  
OF WIDTH,  $W$  THE ISI-FREE SAMPLING REGION

COMPUTE AN ESTIMATE OF THE CHANNEL DELAY-SPREAD,  $\hat{D}$   
BY SUBTRACTING THE WIDTH OF THE PLATEAU,  $W$  FROM THE LENGTH OF THE CYCLIC  
EXTENSION,  $L$

$$\hat{D} = L - W$$

STOP

FIG. 5

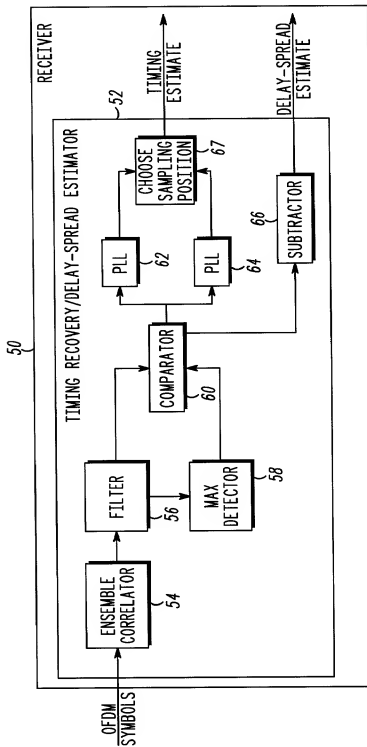


FIG. 6

5/6

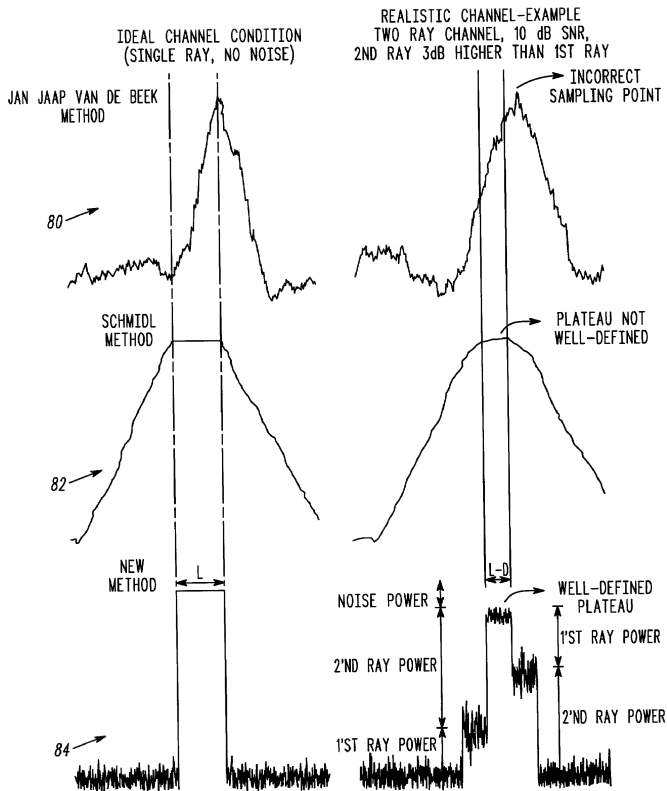


FIG. 7

6/6

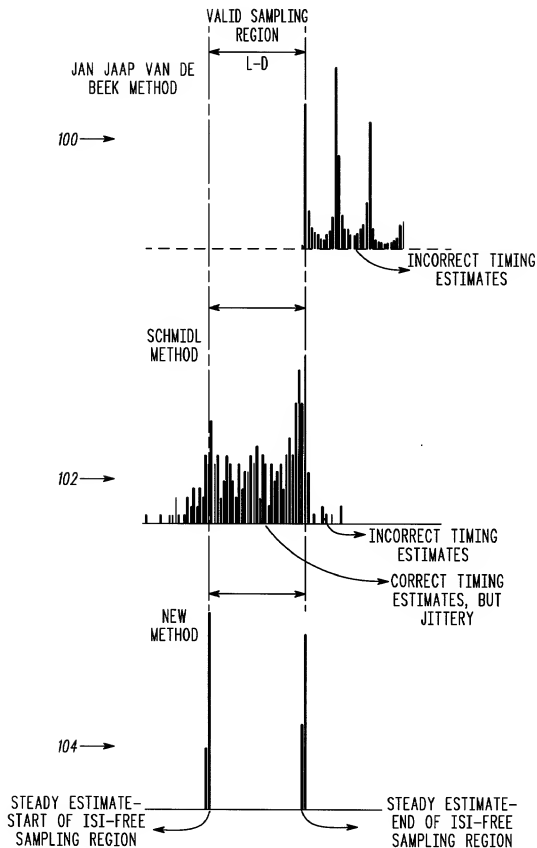


FIG. 8